

**CLAIMS**

1. A method of interference cancellation comprising:  
receiving a signal including at least a first data component and a second  
5 data component on a communication channel;  
determining a characteristic of the communication channel;  
estimating an interference factor based upon the characteristic;  
using the interference factor to cancel the second data component from the  
signal; and  
10 recovering the first data component from the signal.
2. The method of claim 1, wherein the interference factor comprises one of a  
data estimate and a partial interference coefficient.
- 15 3. The method of claim 1, wherein the signal comprises a spread spectrum  
code division multiple access system signal.
4. The method of claim 1, wherein the step of estimating comprises applying  
a function to the characteristic.  
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5. The method of claim 4, wherein the function comprises a piece-wise linear  
estimation of the hyperbolic tangent.
6. The method of claim 4, wherein the function comprises a piece-wise linear  
25 estimation of a probability error function.
7. The method of claim 1, wherein the characteristic comprises one of a  
signal estimation and a noise estimation.

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8. In a receiver including interference cancellation, the receiver adapted to receive a signal including a first data component and a second data component, a method of providing a data estimate comprising the steps of:

estimating a signal-to-noise ratio for signal;

5 applying a function to the signal-to-noise ratio to determine a soft data estimate on a PCG-by-PCG for each of the first data component and the second data component; and

subtracting from the signal the soft data estimate of the second data component.

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9. The method of claim 8, wherein the step of estimating a signal-to-noise ratio comprises estimating a first signal term and second signal term.

10. The method of claim 8, wherein the function comprises a piece-wise linear estimation of the hyperbolic tangent.

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11. In a receiver including partial interference cancellation, the receiver adapted to receiver a signal including a first data component and a second data component, a method of providing a partial interference coefficient comprising the steps of:

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estimating a first signal term and a second signal term of the signal;

applying a function to the signal-to-noise ratio to determine an intermediate parameter on a PCG-by-PCG basis;

25 using the intermediate parameter to determine a partial interference coefficient.

12. The method of claim 11, comprising the step of using the intermediate parameter to determine a second partial interference coefficient.

30 13. The method of claim 11, wherein the function comprises a piece-wise linear estimation of a probability error function.

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